EMS PROCEDURE
Identifying Significant Environmental Aspects

Purpose

The purpose of this procedure is to identify the significant environmental aspects of the Robert S. Kerr Environmental Research Center's (RSKERC) activities, products, or services.

Scope

This procedure is applied to all activities, products, and services that are internal to and under the control of the RSKERC. It is applied equally to those aspects at the RSKERC that originate from external sources.

Definitions

Environmental Aspect

Element of an activity, process, or service that can interact with the environment. (The environmental aspect of an activity is that part of it that creates a possibility for an environmental impact. As such, it is equivalent to the concept of "hazard", in Safety, which is also defined as the mere possibility of a negative event.)

Significant Environmental Aspect

An environmental aspect that has or can have a significant environmental or business impact (i.e., one that can potentially cause a significant environmental or operational impact). An environmental aspect that has or can have applicable regulatory or other requirements.

Environmental Impact

Any change to the environment, whether adverse or beneficial, wholly or partially resulting from the facility's activities, products, or services. (A potential environmental impact is equivalent to the concept of "risk", in Safety, which assigns a probability and consequence to the possible negative event that may result from a "hazard").

Significance Criteria

Factors used in deciding whether an environmental aspect is regarded as significant.

These factors include:

A) The magnitude of the potential impacts.

B) The frequency and duration of the potential impact.

C) Exposure level (i.e., the effect of the potential impact relative to the same impact from other local contributors).

D) The effectiveness of present controls.

E) The ability to control and further influence the impact.

These criteria are applied using the three scoring factors and the two weighting factors found in Table 1 to assign an overall score to each aspect using the following equation:

$$SCORE = (A + B + C)* D*E$$

Scores from each EMS Implementation Team member are then tabulated (Table 2) and an overall average score is determined.

Aspects with scores > 14.0 are automatically considered significant. The EMS Team, however, may determine that an aspect is significant independently of its score

NOTE Regulatory requirements are considered in Criteria A.

The costs to control an aspect relative to the resulting effect are taken into account in the weighting factors.

The EMS team can decide an aspect is significant even if the aspect scores below the action level.

Table 1 can be found at the end of this procedure

Procedures

The EMS Implementation Team reviews the activities, products, and services associated with the operation of the RSKERC in order to maintain an up-to-date assessment of its environmental aspects. This assessment is conducted annually and used to determine those aspects that could have a significant impact on the environment and to help set meaningful objectives and targets for the EMS. In reviewing the site's environmental aspects, the following procedure is followed:

1. Identification of environmental aspects associated with changes in RSKERC operations occurs in three ways:

   - Activities, products, and services of the RSKERC are defined by the EMS team along with their associated material inputs and outputs in order to determine possible environmental interactions. The team uses brainstorming, laboratory walkthroughs, and questioning of personnel at the RSKERC to define the activities, products, and services. Only activities, products, and services that are within the scope of the EMS and under the management control of the RSKERC are considered in this evaluation. Categories of

environmental interactions are broadly defined to be the environmental aspects associated with those activities, products, and services.

- Employee input regarding activities, products, and services, especially new activities, products, and services associated with an employees work is accepted for review by the EMS team. A checklist questionnaire, highlighting potential situations that may lead to new activities, products, and services, is distributed to personnel at the RSKERC for use in identifying any of these that should arise as part of the employees' duties.

- Employees holding job functions that are most likely to encounter new activities, products, and services at the RSKERC are recruited to be members of the EMS team as means to identify new activities, products, and services for the team to review easily.

2. All activities, products, and services are aggregated by environmental aspect. For each of these aspects, the potential environmental impact(s) are defined. Applicable regulatory or other requirements are also defined, along with applicable policy commitments, and stakeholder concerns. Consideration is also given to the effectiveness of any existing controls related to the environmental aspect.

3. The identified environmental impacts, legal requirements, policy commitments, stakeholder concerns, and existing management programs associated with each environmental aspect are compared against established criteria to judge the overall significance of the aspect. Current significance criteria are defined and included in this procedure.

4. The EMS will be notified by facility management whenever a new activity, product, or service is initiated at the RSKERC. The EMS applies the requirements of this procedure to ascertain if any new significant environmental aspects have been introduced.

5. This procedure is also applicable to activities, products, and services at the RSKERC that originate from external sources (e.g., suppliers). Significant environmental aspects on the RSKERC premises that originate from such sources are managed like the other significant environmental aspects.

6. This procedure will be applied on an annual basis to ensure the EMS addresses the significant aspects to maintain currency.

Records

The EMS Coordinator will keep and maintain the following records (the information may be organized into lists or tables to facilitate access and presentation):

1. A list of activities, products and services and their associated environmental aspects and possible impacts.

2. A list of significant environmental aspects together with their associated activities, products and services, and designation of regulatory or other requirements.

Table 1 - Criteria for Identifying the Significance of Environmental Aspects

Significance Criteria	High	Medium	Low
A. Magnitude of potential impacts	- Impact results in measurable risk of adverse health impacts - Impact results in measurable ecosystem damage - Impact violates regulatory standard Score = 12	- Adverse health risks possible but unlikely - Ecosystem damage possible but unlikely - Increases potential to violate regulatory standards Score = 6	- Negligible human health risk - Insufficient to cause ecosystem damage - No applicable standards, or negligible contribution Score = 3
B. Frequency/duration of potential impacts	- Continuous Score = 6	- Periodic, but at regular intervals or for extended duration Score = 4	- Rare occurrence for short duration Score = 2
C. Exposure Level (i.e., geographic/demographic extent of potential impacts)	- Large populations/sensitive ecosystems potentially subject to impacts Score = 6	- Impacts affect small population; ecosystems can accommodate impacts without permanent damage Score = 4	- Impacts occur in sparsely populated areas or insensitive ecosystems Score = 2
D. Effectiveness of current mitigation controls and procedures	- Impact fully mitigated by existing controls/procedures and failure rate is low Weighting Factor = 0.75	- Impact partially mitigated by existing controls/procedures, or failure rate is high Weighting Factor = 0.9	- No controls/procedures in place or existing procedures ineffective in mitigating impacts Weighting Factor = 1.0
E. Extent of Control and Ability To Influence	- Local impacts resulting directly from our activities, services, or products Weighting Factor = 1.0	- Off-site, indirect, or 3rd party impacts influenced by our activities, services or products (e.g. demand for materials or 3rd party services) Weighting Factor = 0.9	- No clear or apparent control over impacts Weighting Factor = 0.1

SCORE = (A + B + C)* D*E

Aspects with scores > 14.0 are automatically considered as significant aspects.

Table 2 – Significance Scoring Table

Environmental Aspect								
Significance Criteria	**Individual Scores**							**Average of Significance Criteria**
	Team Member 1	**Team Member 2**	**Team Member 3**	**Team Member 4**	**Team Member 5**	**Team Member 6**	**Team Member 7**	
A								
B								
C								
D								
E								
Individual Totals =								Average Overall Score = ?